

New Directions for Ag Research

(A Position Paper of the Northern Plains Sustainable Agriculture Society)

Where We Are

Deciding where our limited Northern Plains research dollars should go is always a difficult task. The tendency is for each of us to want to put the dollars where we think they will solve problems that happen to confront us at the moment. It is not surprising, therefore, that wheat farmers, for example, would like to see all of our agricultural research dollars go to solving our wheat scab problem. Sunflower producers, on the other hand, would probably be happy if it all went to solving the Sunflower Midge problem. Beef producers, meanwhile, have their own priorities which would solve some of the problems related to beef production. Dairy producers have their own list.

This approach to research tends to conclude that if solutions to production problems aren't forthcoming quickly enough then it is either the fault of politicians (who are unwilling to allocate sufficient funds) or the fault of researchers (who seem incapable of finding solution quickly enough). And, of course, it pits producers (and researchers) against one another as they compete for the same resources.

More importantly, this way of doing research inevitably puts us on a treadmill (always chasing a solution for an emerging problem which sets the stage for the next problem) and consequently there will never be enough money or expertise to keep agriculture producing efficiently. The problem with this approach is twofold: it is "curative" rather than "preventative" and it attempts to isolate production problems to solve them with a single strategy, rather than looking at problems in context and solving them by changing the circumstances that caused the problems in the first place.

It is time to step back and take a more comprehensive approach.

From Problems to Paradigms: Marketing the Farm Instead of Farming the Market.

While it is necessary to keep doing some "curative" research, we need to begin allocating more of our scarce resources to developing "preventative strategies" that not only reduce the number of production problems facing us, but also create new marketing opportunities that increase the farm sector's share of the agricultural economy. In other words, we need to do more research that empowers farmers to solve their own production problems and improve their own economic position.

The way to do this is no big mystery. In North Dakota, and elsewhere, examples already exist. The kind of research that lies behind the evolution of farmer enterprises like AgGrow Oils LLC and The North American Bison Cooperative can serve as models.

The intent of the research behind these enterprises was not to solve an isolated production problem, but to create a new paradigm. Researchers in these instances saw that their task was not simply to cure a problem, but to find new ways to adapt farming practices to local ecological

neighborhoods and to new market realities. What the research behind such enterprises focused on was developing a production and marketing system that would prevent unmanageable problems and therefore reduce the risk of farmers.

The AgGrow Oils model recognized, for example, that raising more wheat for less money on a mass production basis for the global economy held little promise for the future of North Dakota farmers. Putting more crop acres into wheat inevitably meant new and more pervasive wheat pest problems. Supplying more wheat as raw material for the global market at best meant uncertain prices, at worst depressed prices. In any case farmers assume all the risk and have no control over their economic welfare. "Farming the market" in this scenario inevitably puts the farmer at a disadvantage.

The research behind AgGrow Oils suggested an alternative based on diversity, flexibility and differentiation. By selecting a diverse group of oil seed crops, all well adapted to North Dakota's ecology, farmers could avoid the intense pest pressure associated with the mass production of one commodity. By building feasibility into the production and processing system, they retain the ability to switch to alternative production if unanticipated production or marketing problems occur. By electing to produce a high quality, differentiated product which is sold before the farmers invest in production costs, production risks are further reduced.

From Researching Problems Within Disciplines to the Disciplined Research of Opportunities that Solve Problems

At least some of our research resources should be directed toward efforts similar to those that gave birth to AgGrow Oils. What opportunities are there for new targeted markets that simultaneously provide security, flexibility and diversity for Northern Plains farmers? The answers to these questions will come from greater multidisciplinary research.

Economists and business managers need to work with agronomists, plant breeders and food processors to do feasibility studies for alternative production and processing enterprises that are uniquely suited to North Dakota's ecology. Nutritionists need to team up with crop and livestock scientists and prairie ecologists to determine which new food products, that can suitably be produced in the Northern Plains, meet the tastes and nutritional needs of today's consumers. Working together with Extension, they could help promote the healthy alternatives of Northern Plains produced seasonal crops and livestock that are well adapted to Northern Plains ecologies. Many locally produced "Dakota" branded, nutritious and delicious food products would likely be very attractive in the marketplace.

And while we are at it, why couldn't nutritionists suggest Dakota produced alternatives to the mass produced food commodities shipped in from California, Colorado or Mexico, as an integral part of locally consumed institutional foods (local school lunch programs, hospitals, colleges and universities, prisons, etc.)? There are potential markets here that could at least partially be filled by local farmers--especially young farmers who need relatively low capital ways of entering farming.

These are all ways of "marketing the farm" instead of "farming the market". In other words, we need to discover the ecological and design advantages that are unique to the Northern Plains, and

then enable farmers to take advantage of the market opportunities inherent in the food quality produced by that kind of local agriculture. The North American Bison Cooperative is a prime example of such a strategy. Clearly there are other similar opportunities.

Agronomists, entomologists, plant breeders, range ecologists, and other scientists also need to team up to help us better understand the complex prairie ecology in which we farm. How can we better fit agriculture into that ecology in ways that would take fuller advantage of that ecology's rich ecosystem services (quality soil, water, and air; a healthy biodiversity, species richness, etc.) without degrading them. Any permanent agriculture ultimately depends on the preservation and enhancement of those ecosystem services.

Such an approach would also lead us toward more effective recycling strategies. Ultimately economic efficiency and ecological health depends on turning all waste in the farming system into food for the farming system. What opportunities are there for developing such economies of scope?

Another dimension of the multidisciplinary approach might be for farmers to work with researcher in what some researchers call farmer research "clubs". Such clubs might consist of small groups of farmers, who share similar ecological niches, working together with one or more researchers to develop production strategies that are well suited to the "place" of the farmers. Such clubs could breed a diversity of crops within a cropping system which would in turn develop long term resistance to crop pests, develop cropping and/or livestock strategies that enable farmers to develop new markets, and would develop production practices which close nutrient cycles on their farms.

Research also needs to focus on the development of more "current" energy sources for agriculture. We should prepare now, for the advent of depleted fossil fuel energy reserves. What opportunities for economic growth and farmer empowerment are waiting to be realized in the energy field? What is the agriculture equivalent of the new Toyota combined gas/electric powered car that makes 66 miles to the gallon?

The disciplined research of all these possibilities, with researchers from various fields working with stake holders, could produce a bright future for Northern Plains farmers, for rural communities and for Land Grant Universities. And we can't say it cannot be done, since we have already begun to do it.

Incidentally, we believe that a side benefit of research that promotes such diversity, flexibility and differentiation, is that the future equivalent to wheat scab, if it occurs at all, would not have a devastating effect on Northern Plains farmers.